

Noise Consultant Scope of Work Data Center Ordinance Advisory Group

Purpose of the Request

Pursuant to the Prince William County (hereinafter "County") Purchasing Regulations, the County requests sealed written proposals from qualified Consultants to address the potential impacts of data center uses on the County's Noise Ordinance. This includes, but is not limited to,

- Profiling the characteristics of data center construction noise,
- Profiling the characteristics of data center operational noise in terms of frequency, intensity, and consistency by cooling design (forced air, evaporative, liquid, etc.),
- Profiling the characteristics of data center emergency generator test and operational noise in terms of frequency, intensity, and consistency,
- Identifying and/or recommending data center noise mitigation means and methods,
- Identifying and/or recommending options for noise modeling (forecast) and noise study(s), either ad-hoc or persistent.

County staff has asked for the selected consultant to propose changes to the Noise Ordinance as appropriate, state statute, or other governing documents, based on the review of best practices from other jurisdictions, and feedback from the staff and Advisory Groups (see Background) using professional judgment to tailor an ordinance or other policy that is appropriate for the scale and needs of Prince William County, including its residents and industry partners.

Best Practices in the context of this Scope of Work are defined as follows:

- Working standards, guidelines or ideas that will provide the most efficient or prudent course of action with respect to the potential impacts of data center uses on the County's Noise Ordinance.
- Best practices will serve as a roadmap for the County to revise, manage, and enforce the Noise Ordinance
- Best practices can be identified by researching the data center industry including noises associated with constructing, operating (normal and emergency), and maintaining these facilities and researching local, national, and international governing authorities with regard to how they manage data center facilities with nearby other uses.
- Best practices, in this context, also include gaining an understanding of data center technology and engineering designs that impact the surrounding community or environment. They are not concerned with internal, potentially proprietary, technologies and designs.

The Advisory Group mentioned above, developed a set of data center impacts or areas of concern which is attached to this SOW in Attachment 1. Attachment 1 is for information only and shall not be construed as being verified, complete, or comprehensive.

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Background

During July 12, 2022, Board of County Supervisors meeting the Board issued Directive 22-28-Noise Ordinance Update in which staff was directed to comprehensively review the noise ordinance and propose appropriate amendments to consider. Following the issuance of the Board directive, the County Executive's Office and County Attorney's Office convened a Noise Ordinance Steering Committee comprised of County departmental representatives (hereinafter "Steering Committee") to review the Noise Ordinance and to determine what options are available for the Board to consider.

On January 23, 2023, staff recommended removing the Noise Ordinance exemption of commercial HVAC at night, thereby exempting only residential dwellings, with a sunset clause of one year. This was proposed to allow time to engage with the community and industry to determine the full impact of the change to the ordinance. The sunset clause is currently set to expire on 28 Feb 2024.

Additionally, staff recommended the creation of the Data Center Ordinance Advisory Group (hereinafter "Advisory Group"), made up of County residents who live near data centers, as well as data center industry representatives, other stakeholders, and County staff to work together to review the impact of the exemption change to the Noise Ordinance and report back to the Board with any recommendations regarding the sunset clause and any other appropriate amendments.

Concurrently, an amendment to the Design Construction Standards Manual (DCSM) and the Zoning Ordinance was initiated to work with stakeholders to address other potential data center impacts. Co-leading agencies of the group will be the Department of Development Services, Public Works Department, Police Department, Planning Office, Office of Sustainability, and Economic Development Department.

The resulting Resolution No. 23-111, unanimously approved by the Board of County Supervisors, the following direction was issued.

NOW, THEREFORE, BE IT RESOLVED that the Prince William Board of County Supervisors hereby initiates an amendment(s) to the Design and Construction Standards Manual and the Prince William County Zoning Ordinance, Chapter 32 of the County Code, to address the potential impacts of data center uses, including, but not limited to, total noise, impacts from backup generators, height impacts, light pollution, energy supply, noise walls, and other noise mitigation, noise study(s), (including, but not limited to, before construction has begun and once each phase of the operation(s) has commenced), buffering, berms, setbacks, landscaping, screening, fencing, building design and height, environmental impacts, and land disturbance.

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Scope of Work

The term "Consultant" or "Offeror" shall include any respondent to this RFP with verifiable professional experience working with the public sector. The Consultant's proposal must clearly identify the area(s) of expertise it proposes to provide (with or without subcontractors).

The Consultant must have expertise in applying skill(s) to the issues facing a county with a diversity of development patterns, demographics, and geography. Per the approved resolution, the Consultant must provide evidence of expert-level understanding of land use factors presented by data center development near residential and other industrial uses along with a full understanding of county-level ordinance development to include review for revision and/or the development of new or targeted code provisions and Dillion Rule governance. The proposal must provide specific examples of similar work completed for the specific area of expertise in question with references. The consultant and or sub-consultant must have experts with knowledge and experience with sound and vibration specific to the data center industry. A Consultant's response to this RFP shall exhibit a thorough knowledge and understanding of the County and/or similar jurisdictions.

ONGOING: Project Management and Quality Assurance and Quality Control

Duration / Elapsed	Deliverables
Ongoing through the full project.	<ul style="list-style-type: none"> • Development of content for project website managed by County staff which is accessible to county, industry, and residential stakeholders participating in the Advisory Group. This includes the preparation of an FAQ to be posted on the project website and updated periodically throughout the project as new updates become available. • Submitting action items and meeting minutes within 3 working days of each meeting (other than public hearings). • Preparing meeting agendas, attending, and managing bi-weekly check-in meetings with key county staff (both in-person and virtual). • Providing monthly progress reports via e-mail to County staff. • Supporting staff with preparing for upcoming community meetings. • Supporting staff in responding to citizen inquiries related to this project.

The Consultant is expected to undertake a variety of general management tasks throughout the engagement, including project planning, schedule management, coordination with sub-consultants (if applicable), quality assurance, and quality control for all work conducted including senior-level review of all deliverables, and coordination with the group. The Consultant will serve as recording secretary at all meetings (other than public hearings) of the Consultant, County,

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citizens, and property owners. The County expects the Consultant to complete clear projections and allocations of work for all staff to ensure project deadlines are met or exceeded in conjunction with other project work.

For efficiency purposes, deliverables associated with this SOW shall be developed iteratively and evolve as each item progresses from initial development, through review, discussion, and comment cycles to a final product. Wherever possible, the creation of wholly new deliverables for any given task shall be avoided.

The Consultant is expected to attend and prepare for project planning meetings with key county staff at key project intervals, likely every two weeks, and/or before any Advisory Group and/or community engagement meetings. Meetings are preferred to be in-person but may include virtual participation for subcontractors or support teams. The first project planning meeting will include discussing the kick-off meeting as well as discussing the scope of work, fees, and schedule.

In addition, the Consultant, in consultation with County staff, will be expected to prepare and provide responses to FAQs which will be posted on the project website, as well as preparing any other additional materials and information for the project website, including information on community meetings. The Consultant will also coordinate with staff on public communications such as preparing press/media releases, postcards (or similar methods of reaching out to the public.

In addition, the Consultant shall interact with other consultants who may be onboarded as part of the Advisory Group's work and goals.

TASK 1: Project Kick-off with Advisory Group

Duration / Elapsed	Deliverables
4 weeks Deliver an overview by the end of week 3 of this task. Completed within 4 weeks of award.	<ul style="list-style-type: none">• Memo including a detailed approach to project tasks, suggested approach to discussions at the Kick-off meeting, and a set of talking points and questions to be utilized in County conversations with group members.• Overview of the proposed approach to best practices, current trends, and draft peer communities (reference list of similar communities).

At the Project Kick-off with the Advisory Group meeting, the Consultant will present the project plan, and their approach to project tasks, and review questions for the County and Advisory Committee. The Consultant will also present their proposed approach to the identification of best practices (Task 3 - Best Practices Review), current trends, and the draft peer review

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communities. This meeting would include a discussion of the Advisory Group's goals and objectives for possible changes to the ordinance.

One week prior to the Project Kick-off with the Advisory Group meeting, the Consultant will prepare and deliver an overview of the proposed approach to best practices, and current trends, and draft Peer Communities (reference list of similar communities) that demonstrate the range of success stories and lessons learned. This summary will also incorporate a more detailed approach to the remaining project tasks and a set of talking points and questions to be utilized in County conversations with Advisory Group members. This deliverable may be the presentation which will be reviewed at the Advisory Group Meeting.

TASK 2. County Ordinance and State Statutory Framework Review

Duration / Elapsed	Deliverables
4 weeks, in parallel with Task 3. Completed within 8 weeks of award.	<ul style="list-style-type: none">• Memo providing an overview of County ordinances and applicable State Statutory Framework and initial suggestions/opportunities for change.• Proposal on how to proceed on the existing Noise Ordinance exemption and sunset clause.

The Consultant shall review the County Noise Ordinance (Chapter 14) with special emphasis on data center noise characteristics and associated complaints. The Contractor shall also review the County Zoning Ordinance (Chapter 32), and Sections 700 & 800 of the Design & Construction Standards Manual (DCSM) to understand the overall County code context. The Zoning and DCSM reviews are not intended to be exhaustive legal reviews, but rather a broad overview so that the Consultant can better understand the structure of the ordinance(s)/DCSM for discussions with County staff as they prepare their review and proposal for the changes to the Noise Ordinance. The Zoning Ordinance and DCSM will be reviewed through a separate contract's Scope of Work.

The consultant shall also review the applicable Virginia statutory framework as it affects noise regulations and understand Dillion Rule governance and limitations on noise ordinance and code enforcement (such as VA Code Section 15.2-980).

The Consultant shall also review the Noise Ordinance exemption change (Section 14-4 (b)), gather any feedback collected by the County, and provide a recommendation for extension, revision, or expiration.

Tasks 2 & 3 should be accomplished simultaneously.

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TASK 3. Best Practices Review

Duration / Elapsed	Deliverables
4 weeks, in parallel with Task 2. Completed within 8 weeks of award.	<ul style="list-style-type: none"> Report with draft best practices global literature review and related information for all areas noted in this task.

The Consultant shall research, and review examples of ordinances aimed at industrial and commercial noise emissions, policy changes, and/or specific methods or criteria for addressing data center noise impacts. The Consultant shall prepare a literature review of best practices globally that address needs most relevant to Prince William County and fit within the context of the County's regulatory system.

Key elements of this review will include cumulative noise mitigation (including from multiple facilities, possibly from one to several data center companies in proximity). Cumulative noise can include noise emanating from data center sites during construction, normal operations, and emergency operations (backup power generation). It should also include noise related to power substation construction and operations when sited adjacent to or within data center campuses.

The Best Practices Review should also investigate noise measurement as a part of zoning or land use planning processes to include sample measurement along with long-term modeling, meter location, and quality during operational and emergency (power) phases. The Consultant shall review best practices for managing construction noise, including times of day to allow such noise.

The Consultant shall review impacts on staff levels and expertise with the County government. The Consultant shall also identify best practice holistic Sound Model (forecast) and Sound Study (operational measurements) report templates.

Tasks 2 & 3 should be accomplished simultaneously.

Task 4. Prepare Outline Version of Potential Additions or Changes to Noise Ordinance

Duration / Elapsed	Deliverables
4 weeks Completed within 12 weeks of award.	<ul style="list-style-type: none"> Outline of potential Noise Ordinance changes. Presentation of the outline to the Advisory Group Draft the First Community Engagement Meeting Presentation. Draft Sound Model (Noise Forecast) Report Template. Draft Sound Study (Noise Analysis) Report Template.

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Based on the research and feedback from the above tasks, the Consultant shall prepare an “Outline” version of the potential Noise Ordinance changes for presentation to the Advisory Group. This detailed outline will be written in plain English rather than legal language and will list the basic structure of the ordinance sections (new or to be changed) and proposals for key ordinance features. The consultant shall identify areas of the potential Noise Ordinance that the County has the authority to adopt and identify those items that would require Virginia legislative changes for the Board of County Supervisors to implement. Special emphasis shall be on data center noise characteristics, by intensity and frequency, and associated complaints. The Contractor shall identify impacts and unintended consequences that the proposed Noise Ordinance Changes might have on other uses.

The purpose of this step is for the group to get a basic understanding of the Noise Ordinance structure and approach before time is invested in the preparation of full ordinance revisions.

The presentation of this outline by the Consultant shall also specifically address the following:

- Context/Justification – background and supporting research for any change.
- Impacts – how will a proposed change affect data centers, residents, other industrial and commercial uses, and County administration including enforcement?
- Risk – what risks are foreseen (government, industry, residential) with adding, removing, or modifying any element of the Noise Ordinance or related policy?
- Ordinance Specifics and Trade-offs – Noise intensity, frequency, and duration, measurement approaches including location (site boundary, affected adjoining property), meter quality, and measurement frequency (ad-hoc or persistent).

The Outline will be shared with County staff for the purpose of providing feedback to the Consultant on the fundamental ordinance elements and choices. This outline version will be presented to the Steering Committee and Advisory Group. Following the presentation, the Consultant shall prepare a noise ordinance draft.

The Consultant shall also draft Sound Model and Sound Study report templates for the County to provide as deliverable guidance for any studies that are mandated by the County. These templates shall be based on best practice reviews and current trends. The templates shall provide a means to report or model operational noise, including during emergency power situations, for individual and compounded (>1 campus) data center campuses. The templates may be combined if the Consultant deems the needs of both models and reports can be managed in one template.

Task 5. First Community Engagement Meeting

Duration / Elapsed	Deliverables
4 weeks	<ul style="list-style-type: none">• Revised outline of potential Noise Ordinance changes.• Community Engagement Presentation.

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Revised outline delivered by the end of week 2 of this task to allow for feedback.	<ul style="list-style-type: none"> • Presentation graphics and materials for the First Community Engagement Meeting, as needed.
Completed within 16 weeks of award.	

The first community engagement meeting will present the revised “Outline” of the potential Noise Ordinance changes following Task 4 feedback. The Consultant shall prepare the required materials and shall partner with staff to facilitate the event, presentations, and collection of community feedback.

The Community Engagement Meeting will not exceed three (3) hours. This Community Engagement Meeting will be scheduled as a single event, delivered from a single centralized County Facility, with the ability for residents to participate virtually.

After the meeting, the Consultant shall prepare a summary of community engagement feedback and develop/update an FAQ responsive to community inquiries. These will be delivered in conjunction with Task 6. Efforts for these deliverables shall be managed in this task.

Task 5 should be accomplished within 14 weeks of the award.

Task 6. Initial Draft Noise Ordinance

Duration / Elapsed	Deliverables
4 weeks	<ul style="list-style-type: none"> • Summary of community engagement feedback from the meeting. • FAQ responsive to community inquiries. • Initial draft of Noise Ordinance. • Presentation to Staff and the Advisory Group. • Draft Second Community Engagement Meeting Presentation (Task 7).
Initial draft delivered at 18 weeks for 1-week County Quality Control review.	
Completed within 20 weeks of award with revised Initial Draft Noise Ordinance.	

The Consultant shall provide the initial draft of the Noise Ordinance tailored to the County's unique needs and context and incorporate community engagement feedback. The Consultant shall present the revised draft Noise Ordinance text to the Advisory Group.

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The Consultant shall provide the Draft Second Community Engagement Meeting Presentation for County feedback prior to Task 7. The County expects this to be an updated presentation from Task 5 which reflects work in this task.

Task 7. Second Community Engagement Meeting

Duration / Elapsed	Deliverables
4 weeks Completed within 24 weeks of award.	<ul style="list-style-type: none"> • Presentation for Second Community Engagement Meeting. • Presentation graphics and materials for the Second Community Engagement Meeting.

The second community engagement meeting will present the draft Noise Ordinance. The Consultant shall prepare the required materials and shall partner with staff to facilitate the event, presentations, and collection of community feedback.

The Community Engagement meeting will not exceed Three (3) hours. This Community Engagement Meeting will be scheduled as a single event, delivered from a single centralized County Facility, with the ability for residents to participate virtually.

After the meeting, the Consultant shall prepare a summary of community engagement feedback and develop/update the FAQ responsive to community inquiries. These will be delivered in conjunction with Task 8. Efforts for these deliverables shall be managed in this task.

Task 8: Prepare Staff Materials for the Board of County Supervisors Work Session

Duration / Elapsed	Deliverables
6 weeks Noise Ordinance and Presentation delivered by the end of week 3 of this task for 2-week County review and feedback. Completed within 30 weeks of award.	<ul style="list-style-type: none"> • Summary of community engagement feedback from the meeting. • Update the FAQ responsive to community inquiries. • Proposed Final Draft Noise Ordinance • Draft Presentation for Board of County Supervisors Work Session which includes community engagement meeting feedback. • Proposed Final Sound Model (Noise Forecast) Report Template. • Proposed Final Sound Study (Noise Analysis) Report Template.

The consultant will take feedback from the Community Engagement Meeting(s) and prepare staff materials for a work session for the Board of County Supervisors. The Consultant will update

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and deliver the materials as used in the second community engagement meeting along with the comments from the public.

The Consultant will deliver the Proposed Final Draft Noise Ordinance and Draft Presentation midway through this task. This will provide for mandatory reviews by the County Attorney and County Executive.

The Consultant shall provide the Proposed Final Sound Model (Noise Forecast) and Proposed Final Sound Study (Noise Analysis) report templates. The templates may be combined if the Consultant deems the needs of both models and studies can be managed in one template.

Task 9: Board of County Supervisors Work Session

Duration / Elapsed	Deliverables
4 weeks The Board Meeting shall be held by the end of week 3 of this task. Completed within 34 weeks of award.	<ul style="list-style-type: none"> • Board of County Supervisors Work Session Proposed Noise Ordinance • Presentations for Board of County Supervisors Work Session which includes community engagement meeting feedback. • Summary and notes of suggestions from the Board of County Supervisors Work Session.

The Consultant shall prepare for a work session for the Board of County Supervisors. The Consultant may present the reviewed materials delivered through Task 8. The work session is estimated not to exceed 4 hours.

Note: The Board of County Supervisors may elect to adopt a resolution to authorize the Public Hearing discussed in Task 10 at the end of this work session reducing the timeline to get to Task 11.

Task 10: Final Recommendation and Authorize a Board of County Supervisors Public Hearing Preparation.

Duration / Elapsed	Deliverables
4 weeks Completed within 38 weeks of award.	<ul style="list-style-type: none"> • Report summarizing recommendations and prior steps. • Final Proposed Noise Ordinance and report.

The Consultant will take into consideration feedback/recommendations from the Board of County Supervisors work session, deliver a summary report, and work with County staff to

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produce a Final Proposed Noise Ordinance. The Consultant shall work with County staff to prepare a report to authorize a Board of County Supervisors Public Hearing.

Task 11: Board of County Supervisors Public Hearing for Final Noise Ordinance

Duration / Elapsed	Deliverables
4 weeks Completed within 42 weeks of award.	<ul style="list-style-type: none"> • Final Board of County Supervisors Proposed Noise Ordinance. • Presentations for Board of County Supervisors Public Hearing.

The Consultant shall attend and may present the finalized Noise Ordinance at the Board of County Supervisors Public Hearing that includes feedback from the Board of County Supervisors Work Session.

Task 12: Project Completion

Duration / Elapsed	Deliverables
2 weeks Completed within 44 weeks of award.	<ul style="list-style-type: none"> • Project Closure Report • Final Sound Model (Noise Forecast) Report Template. • Final Sound Study (Noise Analysis) Report Template.

The Consultant will work with the County staff to complete and close out and final deliverable updates. The Consultant shall prepare a final Project Closure Report delineating project achievements as well as recommendations for any post-project actions that the County should consider.

Attachment 1 – Potential Impacts Suggested by Members of the DCOAG

1. Health – Hypertension, stress, psychological, respiratory, etc.

- a. Volume, frequency and duration of noise from equipment, generators, other industrial activities
- b. Dust generated from construction activity
- c. Air pollution from generators
- d. Drinking water- heavy metal, fuel, other toxic spills, pathogens going into reservoir
- e. Electromagnetic radiation from power lines and infrastructure
- f. Vulnerable populations (children, elderly, lower-income)
- g. Light pollution

2. Real estate value

- a. Residential property (noise, aesthetics, viewshed, etc.)
- b. Residential damage
 - i. Vibration (from blasting)
 - ii. Dust
- c. Noise sensitive uses (e.g., shopping centers, movie theatres)

3. Compounding from concentration

4. Public facilities

- a. Schools
- b. Churches
- c. Fire Stations
- d. Parks and Recreation facilities
- e. Hospitals
- f. Police Stations

5. County tax revenue and expenditures

- a. Methodology to arrive at the equation
- b. Residential tax burden

6. Traffic and comparison to other uses

- a. Construction

Attachment 1 – Potential Impacts Suggested by Members of the DCOAG

- b. New roads
- c. Concentration
- d. Relative vehicle trips per day

7. Plant species and wildlife species

- a. Survivability
- b. Economic component
- c. Develop an assessment methodology on threatened and endangered species at Federal and State level

8. Water availability and quality

- a. Usage of water for cooling
- b. Usage of groundwater vs public potable water
- c. Stormwater runoff

9. Economic growth

- a. Ancillary businesses
- b. Supply chain
- c. Jobs (construction and operation)
- d. Tourism

10. County Government Services

- a. Fire and Rescue
- b. Police
- c. Health Department
- d. County Administration
- e. Public Schools

11. Local Power

- a. Reliability
- b. Availability

12. Decommissioning/Recommissioning

- a. Storage Tanks

Attachment 1 – Potential Impacts Suggested by Members of the DCOAG

- b. Clean up
- c. Site stabilization
- d. Refurbishment
- e. Adaptive reuse

13. Cultural Resources

- a. Cemeteries/Graves
- b. Historic structures
- c. Historic landscapes

